IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
CHARLESTON DIVISION

JANE DOE, Plaintiff, vs. NORTHWESTERN MUTUAL LIFE INS. CO., Defendant.	)	Civil No. 2:10-cv-02961 **ORDER**

This matter is before the court on defendant's motion in limine to exclude the expert opinion testimony of James L. Bumgartner, M.D., L. Randolph Waid, Ph.D., Joan Prudic, M.D., and Ziad Nahas, M.D., pursuant to Federal Rule of Civil Procedure 702 and Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993). For the reasons set forth below, this court partially overrules and partially sustains defendant's objections.[1]

I. BACKGROUND

Jane Doe became disabled due to severe depression in 2005 and applied for disability benefits under three Northwestern Mutual Life Insurance Company (Northwestern) insurance policies on August 11, 2005. Two of those policies limit benefits to twenty-four months if disability arises from a mental disorder. In September 2007, plaintiff received her last payment under the two policies containing the 24-month limitation for mental disorders. In this suit, plaintiff claims that she

[1] This order is premised on the admissibility of Dr. Katherine Donovan's reports as permissible basis for expert reliance pursuant to Rule 703. Defendant has advised the court that it will submit a motion in limine concerning Dr. Donovan's testimony after it has finished deposing her. The parties may move to reconsider this ruling if it is affected by the outcome of that motion.

sustained brain damage as the result of a treatment regimen she received in 2005, which prevents her from returning to work independent of her depression. Plaintiff claims that disability from brain damage is not a "mental disorder," and therefore insurance benefits should not be limited to the twenty-four month payment period.

Plaintiff received twenty-one electroconvulsive therapy (ECT) treatments from July 14, 2005 through September 27, 2005, at the Medical University of South Carolina (MUSC). ECT is a procedure in which electric currents are passed through the brain via electrodes placed on the head, deliberately triggering a brief seizure, and is prescribed for patients with severe depression. There are two methods of electrode placement for ECT treatments: bilateral, involving the placement of an electrode on each side of the head, and unilateral, involving placement of both electrodes on one side of the head. All of plaintiff's treatments were bilateral.

Plaintiff claims that the ECT treatments impaired both her retrograde and anterograde memory. Retrograde memory loss or retrograde amnesia is the loss of memories acquired before the treatment. Anterograde amnesia is the inability to acquire new memories.

Plaintiff seeks to call the following five expert witnesses: Dr. Prudic, an author and researcher on the effects of ECT treatment; Dr. Nahas, a medical doctor certified in psychiatry, a professor of psychiatry and behavioral sciences, the director of the Brain Stimulation Laboratory and Mood Disorder Program at MUSC, and one of plaintiff's treating physicians; Dr. Waid, a licensed clinical psychologist, who specialized in neuropsychology and forensic psychology and performed neuropsychological testing on plaintiff; Dr. Bumgartner, plaintiff's treating

neurologist; and Dr. Donovan, her treating psychiatrist. Plaintiff's experts assert nine opinions to which defendant objects: (1) ECT treatments of the type provided to plaintiff can cause persistent retrograde memory loss beyond six months from treatment; (2) ECT treatments of the type provided to plaintiff can cause persistent anterograde memory loss beyond six months from treatment; (3) plaintiff has suffered persistent retrograde memory loss; (4) plaintiff's persistent retrograde memory loss was caused by her ECT treatments; (5) plaintiff's persistent anterograde memory loss was caused by her ECT treatments; (6) plaintiff's other cognitive impairments were caused by her ECT treatments; (7) there are no known treatments for retrograde memory loss; (8) cognitive remediation is not customarily within the scope of the mental health profession; and (9) plaintiff's memory loss prohibits her from returning to her career as an OB/GYN.

II. STANDARD OF REVIEW

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Civ. P. 702. Thus, testimony is admissible under Rule 702 if it concerns (1) scientific, technical, or other specialized knowledge that (2) will aid the jury or other trier of fact in understanding or resolving a fact at issue. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 592 (1993).

This court is tasked with assessing "whether the proffered evidence is sufficiently reliable and relevant . . . focusing on the principles and methodology

employed by the expert." Westberry v. Gislaved Gummi AB, 178 F.3d 257, 261 (4th Cir. 1999) (internal quotation marks omitted). "[R]eliable expert opinion must be based on scientific, technical, or other specialized knowledge and not on belief or speculation, and inferences must be derived using scientific or other valid methods," which may "be indicated by testing, peer review, evaluation of rates of error, and general acceptability." Oglesby v. Gen. Motors Corp., 190 F.3d 244, 250 (4th Cir. 1999).

The analysis is a "flexible one," id., and the factors the court need consider will depend upon the "particular circumstances" of the "particular case." See Kumho Tire Co. v. Carmichael, 526 U.S. 137, 150 (1999). Additionally, "the court need not determine that the expert testimony a litigant seeks to offer into evidence is irrefutable or certainly correct," however, it should exclude "evidence that has a greater potential to mislead than to enlighten." Westberry, 178 F.3d at 260 (internal quotation marks omitted). Additionally, "expert opinions may be based upon other expert opinions and observations '[i]f of the type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject.'" Westfield Ins. Co. v. Harris, 134 F.3d 608, 612 (4th Cir. 1998) (quoting Fed. R. Civ. P. 703).[2]

III. DISCUSSION

A. General Causation

i. Retrograde Memory Loss

Plaintiff offers Drs. Prudic and Nahas to establish that the type of ECT treatment administered to plaintiff can cause long term retrograde memory loss

[2] Rule 703 further explains, "Thus a physician in his own practice bases his diagnosis on information from numerous sources and of considerable variety, including statements by patients and relatives, *reports and opinions* from nurses, technicians and other doctors, hospital records, and x-rays."

persisting beyond six months. Plaintiff provides Drs. Bumgartner and Waid only to establish specific causation.

Defendant concedes that some forms of ECT treatment can cause retrograde memory loss for up to six months, however, defendant argues these studies are insufficient to provide a basis for expert testimony that the type and duration of plaintiff's memory loss can be caused by the type of ECT treatment she experienced. Plaintiff and her experts, Dr. Prudic, Nahas, and Bumgartner, primarily rely upon the Sackeim Study, co-authored by Dr. Prudic, to demonstrate that the doctors relied upon sufficient scientific and factual bases for their opinions.[3] This study found that 12.4% of patients who underwent bilateral ECT treatment had persistent retrograde memory loss at the six month marker, and that this memory loss was "substantial." The only procedural variable which predicted inclusion in this subset was the use of bilateral electrode placement. Sackeim Study 252.

First, defendant claims that plaintiff's treatment parameters may have been different from patients in the cited studies, therefore plaintiff's condition does not "fit" in those studies. While it is unclear whether some treatment parameters may have varied between plaintiff and the tested subjects because plaintiff's "seizure threshold" was not determined, the Sackeim Study found that the *only* variable which predicted long term memory loss was bilateral electrode placement. Id. at 252-54; Prudic Dep. 79:15-80:19. Furthermore, it is general practice not to adjust the dosage relative to a patient's seizure threshold. Sackeim Study 244-45 ("[A]pproximately

[3] See Sackeim et al., The Cognitive Effects of Electroconvulsive Therapy in Community Settings, Neuropsychopharmacology, 2007/Jan.; vol. 32(1): 244-54. Defendant also may be contending that Dr. Nahas did not rely on sufficient scientific data because he did not mention the Sackeim Study by name. If defendant is indeed making that argument, it is without merit as Dr. Nahas correctly explained the findings of the study in detail in his report.

half [of US practitioners] do not adjust dosage relative to the patient's seizure threshold."). Defendant also asserts that some studies show that memory loss is less likely to occur when briefer electric pulses are used in the ECT treatment, and that plaintiff received brief to ultra-brief electric pulses. This goes to the weight, not admissibility, of the experts' opinions.

Second, while the experts did not rely on studies that measured the effects of ECT treatment *beyond* six months, they permissibly extrapolated from reliable facts and data using reliable procedures accepted in the field. The Sackeim Study similarly postulated, "The demonstration of difference in long-term cognitive outcomes [measured at the six month point] supports the conclusion that some forms of ECT have persistent long term effects on cognitive performance." Sackeim Study at 252.

Dr. Nahas explained that clinicians in the field believe that cognitive impairments are real and long lasting based on the shorter studies and their observations of patients who have received these treatments. Because of this clinical sense, Dr. Nahas pointed out that researchers have continued to expand the time frame for testing the long term effects of ECT treatment on memory, however, problems in maintaining large enough cohorts of severely depressed patients and financial constraints have not permitted studies to expand the time frame beyond six months at this point. He explained that the six month studies were performed to demonstrate that the cognitive impairments were not temporary, but persistent, and from a "clinical standpoint, [the effects] weren't only limited to six months." Each of the doctors extrapolated from six month scientific studies, reports, and clinical experience, which one doctor testified was permissible methodology in the field.

This type of extrapolation is permitted, especially in the areas of cutting edge science at issue here, so long as the expert extrapolates from reliable data and utilizes methodologies typically applied in his field. City of Greenville v. W.R. Grace & Co., 827 F.2d 975, 980 n.2 (4th Cir. 1987) (upholding a district court's decision to allow an expert to testify that low levels of asbestos could cause serious health risks based on studies showing that high levels of asbestos could cause serious health risks). The Fourth Circuit explained,

> we do not believe that [the defendant] should be allowed to escape liability simply because . . . there are, as yet, no epidemiological studies concerning the health risks associated with asbestos contamination of office buildings. Under the circumstances of this case, we agree with our fellow circuits that "products liability law does not preclude recovery until a statistically significant number of people have been injured or until science has had the time and resources to complete sophisticated laboratory studies."

Id. (quoting Ferebee v. Chevron Chem. Co., 736 F.2d 1529, 1536 (D.C. Cir. 1984)); see also Wells v. Ortho Pharm. Corp., 788 F.2d 741, 745 (11th Cir. 1986) ("A distinction exists between legal sufficiency and scientific certainty."). "A cause-effect relationship need not be clearly established by animal or epidemiological studies before a doctor can testify that, in his opinion, such a relationship exists." Ferebee, 736 F.2d at 1535. This is especially important for cases involving a causation issue on the "frontier of current medical and epidemiological inquiry," as is present in this case. Richardson v. Richardson-Merrell, 857 F.2d 823, 832 (D.C. Cir. 1988).[4]

[4] See also Mendes-Silva v. United States, 980 F.2d 1482, 1487 (D.C. Cir. 1993) (reversing a district court decision excluding expert testimony); Ambrosini v. Labarraque, 101 F.3d 129, 129 (D.C. Cir. 1996) (reversing a district court decision to exclude expert testimony finding that the district court "had not distinguished between the threshold question of admissibility and the persuasive weight to be assigned the expert evidence").

"[U]nder the Daubert standard, epidemiological studies are not necessarily required to prove causation, as long as the methodology employed by the expert in reaching his or her conclusion is sound." Benedi v. McNeil-P.P.C., Inc., 66 F.3d 1378, 1384 (4th Cir. 1995). The doctors' opinions concerning the potential duration of retrograde memory loss caused by ECT treatment is based on sufficient facts and data and relies upon permissible methodology within the field. While these opinions have not been "proven" to "scientific certainty," at this point, they are "legally sufficient." Wells, 788 F.2d at 745.

Third, defendant claims the Sackeim Study is inapplicable because it tested for autobiographical memory loss as opposed to memory loss concerning learned information. The expert testimony indicates that retrograde memory loss applies to both types of lost information. Defendant failed to provide sufficient medical or scientific evidence justifying bifurcation of retrograde memory loss, therefore, this challenge is without merit.

Defendant claims that because there is no known "mechanism" by which ECT treatment causes cognitive impairments, the doctors should not be permitted to testify that a causal relationship exists. Defendant has not explained why this undermines the reliability of the doctors' opinions, and the court finds that the experts' opinions concerning general causation of retrograde memory loss are sufficient notwithstanding the continued uncertainty of the brain's mechanics. Falling from heights was an accepted cause of broken bones long before Newton explained gravity.

Based on the foregoing, defendant's objections concerning the lack of scientific and factual basis for Drs. Prudic, Nahas, and Bumgartner's opinions are overruled.

Defendant also contests Drs. Waid and Bumgartner's general qualifications to testify to the relationship between ECT treatment and memory loss. Dr. Bumgartner is a neurologist, has treated patients with ECT related cognitive impairments, and based his opinion on the most current literature in the field, the Sackeim Study, discussed above. Therefore, Dr. Bumgartner may testify that ECT treatment can cause retrograde memory loss to the extent necessary to provide his opinion concerning specific causation.

Dr. Waid has his M.A. in General Psychology and his Ph.D. in Clinical Psychology. Waid CV 1. He testified that he has taught classes, seminars, and instructed interns and fellows at MUSC on ECT treatment and its effects. Waid Dep. 36:22-37:3, 38:16-39:22. He explained that he did not specifically rely on one article when diagnosing plaintiff with ECT induced cognitive impairments, but that he was familiar with the literature and had read the material on the subject. Id. at 117:22-118:12. This testimony could be interpreted to be at odds with other portions of Dr. Waid's testimony, but at this stage of the litigation, the court finds that Dr. Waid's testimony concerning the basis of his opinions is sufficient. But see Waid Dep. 119:16-117:3, 121:9-122:8, 182:4-10. Dr. Waid also testified that he participated in a research study managed by the head of MUSC on ECT treatments. Id. at 30:15-19, 33:15-21. At this point, it appears that Dr. Waid is qualified to testify on the effects of ECT treatment on retrograde memory based on his expertise, professional and

educational specialization, and his knowledge of the literature in the field, to the extent necessarily involved in his testimony concerning specific causation.

Defendant's argument that Dr. Waid "usually" does not diagnose Axis III conditions and ECT related cognitive impairment is an Axis III condition does not sufficiently establish that he cannot make such a diagnosis or even that he does not typically diagnose ECT related cognitive impairments. It should be noted, however, that without sufficient reliance on the literature and materials in this field, Dr. Waid's opinion would not be permissible as that the effects of ECT do not appear to be "generally accepted" at this time. Therefore, if at trial it becomes apparent that Dr. Waid is relying on his "general knowledge" in the field and not scientific research, defendant may renew its objection to the basis of Dr. Waid's opinions.

Therefore, defendant's objections to the general qualifications of Drs. Waid and Bumgartner and to the basis for Dr. Waid's opinion are overruled, and the doctors may testify to general causation to the extent necessary to testify to specific causation.

ii. Anterograde Memory Loss

At this court's hearing, plaintiff explained that she only planned to establish general causation for ECT induced anterograde memory loss through Dr. Nahas. Nowhere in Dr. Nahas' testimony does it clearly state his alleged opinion that ECT treatments cause anterograde memory loss. There are vague portions concerning "memory deficits" generally or statements that it is "not assumed" that short term anterograde memory will fully recover after ECT, or that plaintiff's memory loss "may well be" attributed to ECT treatments, but plaintiff has failed to cite any portion

of Dr. Nahas' deposition or report that definitively states that Dr. Nahas holds the opinion that ECT treatment can cause anterograde memory loss.

Furthermore, even if the court were to assume that Dr. Nahas would be willing to provide such an opinion, it would lack a sufficient basis. Plaintiff relies upon the Sackeim Study and a Robertson & Pryor review article[5] to establish that there is sufficient data to support a conclusion that ECT treatments can cause long term anterograde memory loss. First, the Sackeim Study was unable to reach definitive conclusions regarding anterograde memory loss at the six month mark though it did note problems "shortly following ECT." While the study showed that retrograde amnesia was not resolved in 12.4% of the research group, the same results did not occur for anterograde memory loss. Rather than supporting plaintiff's contentions, the Sackeim Study demonstrates that anterograde and retrograde memory loss do not necessarily go hand in hand. The Robertson & Pryor article has limited discussion of *anterograde* memory loss specifically, and is a review article, not a scientific study or other document typically relied upon in this field.

Furthermore, Dr. Nahas' arguably most direct statements concerning ECT treatment and anterograde memory loss rely on the *possibility* of verification by differential diagnosis. Differential diagnosis is not an acceptable means for establishing general causation. In re Bausch & Lomb Inc. Contacts Lens Solution Prods. Litig., 693 F. Supp. 2d 515, 519 (D.S.C. 2010). There is an insufficient basis to permit Dr. Nahas to extrapolate that ECT can produce long term anterograde memory loss. Drs. Bumgartner and Waid's testimony suffers the same infirmities.

[5] Robertson & Pryor, Memory and Cognitive Effects of ECT: information and assessing patients, *Advances in Psychiatric Treatment* (2006) vol. 12: 228-238.

Based on the foregoing, the court sustains defendant's objection to Drs. Nahas, Waid, and Bumgartner's opinions that ECT-treatment can cause anterograde memory loss.

B. Diagnosed Conditions

The doctors have testified and studies confirm that retrograde memory loss is often diagnosed based on a patient's complaints and self-reports because testing is not generally conducted before the causal event, therefore there is no objective frame of reference for post event aptitude.[6] Drs. Bumgartner, Waid, Prudic, and Nahas each relied upon sufficient facts and data and applied a methodology standard in the medical profession in the clinical setting to reach the diagnosis, and therefore, the court overrules defendant's objection. Defendant does not object to the doctors' opinion that plaintiff suffers from anterograde memory loss.

C. Specific Causation

i. Retrograde Memory Loss

Drs. Nahas, Prudic, Waid, and Bumgartner used differential diagnosis to determine that ECT caused plaintiff's retrograde memory loss. Each doctor explained that they ruled out depression as the casual factor by analyzing plaintiff's memory at the time her depression was in remission. Waid Rep. 2; Bumgartner Rep 2; Prudic Rep 5; Nahas Rep. 2. Since her retrograde memory loss persisted even when her depression subsided and many of plaintiff's other cognitive skills that had decreased with depression returned, the doctors determined that depression did not cause the

[6] Kho et. al., A Retrospective Controlled Study into Memory Complaints Reported by Depressed Patients After Treatment with Electroconvulsive Therapy and Pharmacotherapy or Pharmacotherapy Only, J ECT, Vol. 22, No. 3, Sep. 2006.

memory loss. Dr. Waid and Nahas also noted that plaintiff showed no indication of fabrication.

Dr. Prudic ruled out medications as the cause for plaintiff's condition because the retrograde memory loss persisted even when plaintiff's medications were "taper[ed] or discontinue[ed]." Prudic Rep. 5. Drs. Nahas, Waid, and Bumgartner did not explain how they ruled out medication as the cause of plaintiff's memory loss, but took serious note of the prescribed medications, Waid Rep. 3, Bumgartner Rep. 2, and Dr. Nahas described their potential effects, which could include both memory loss and improvement. Nahas Dep. 2/10/12, 91:24-92:3. Dr. Nahas also explained that he considered the temporal relationship of plaintiff's complaints to her ECT treatments. Nahas Dep. 2/10/12, 89:11-90:2.

Differential diagnosis "is a standard scientific technique of identifying the cause of a medical problem by eliminating the likely causes until the most probable one is isolated." In re Bausch & Lomb, 693 F. Supp. 2d at 519 (internal quotations omitted). "To be reliable, a differential diagnosis must first 'rule in' a plaintiff's proposed cause and then 'rule out' alternative causes." Id. (citing Westberry, 178 F.3d at 263). However, "a medical expert's opinion based upon differential diagnosis normally should not be excluded because the expert has failed to rule out every possible alternative cause of a plaintiff's illness." Cooper v. Smith & Nephew, Inc., 259 F.3d 194, 202 (4th Cir. 2001). "In such cases, the alternative causes suggested by a defendant normally affect the weight that the jury should give the expert's testimony and not the admissibility of that testimony." Id. Furthermore, "depending on the circumstances, a temporal relationship between exposure to a substance and

the onset of a disease or a worsening of symptoms can provide compelling evidence of causation." Westberry, 178 F.3d at 265 (finding that a doctor's testimony based on differential diagnosis and the temporal connection to exposure to talc sufficient to establish specific causation).

Defendant also claims that Dr. Prudic did not review all of plaintiff's medical reports, therefore she had an insufficient basis to form her opinion that ECT treatments caused plaintiffs condition. The reports Dr. Prudic relied upon appear to include the majority of the reports created by Drs. Waid, Bumgartner, Donovan, and Nahas. These are the type of reports typically relied upon by experts in Dr. Prudic's position. Dr. Prudic may apply her specialized knowledge in the field of ECT research to the facts gleaned from these admissible reports. Similarly, Dr. Waid utilized reports typically relied upon in his field. Defendant has not explained why Drs. Prudic and Waid's opinions are insufficient without other documents, and may cross examine the doctors concerning documents they did not review, if they are otherwise admissible.

Based on the record before the court at this time, it appears that each doctor relied on sufficient observations or reports permitted by Rule 703 and utilized appropriate methods to analyze plaintiff's condition. The court may reconsider this motion at trial if the testimony demonstrates that any of the doctors "fail[ed] to take serious account" of plaintiff's medication when determining the cause of her retrograde memory loss." Cooper, 259 F.3d at 202 (internal quotations omitted).

ii. Anterograde Memory Loss

As discussed supra, plaintiff has failed to demonstrate permissible means for establishing that ECT treatment can cause anterograde memory loss. Specific causation cannot be established by differential diagnosis when the possibility of general causation has not been established. See In re Bausch & Lomb, 693 F. Supp. 2d at 519. Therefore, defendant's objection to testimony that plaintiff's ECT treatments caused her anterograde memory loss is sustained.

iii. Deficits in Attention, Concentration, and Mental Processing Speed

Plaintiff provided insufficient evidence to support testimony that ECT treatments can cause long term (as opposed to short term) deficits in attention, concentration, and mental processing; therefore, defendant's objection to Dr. Waid's testimony that plaintiff's ECT treatments caused those deficits is sustained.

D. Treatments

Dr. Nahas' report states that that there are "no known therapies to effectively treat retrograde memory loss." Nahas Rep. 2. Defendant takes issue with Dr. Nahas' definition of therapies and claims that his opinion should not be permitted because Dr. Nahas explained that a patient with retrograde memory loss can use a calendar or list of reminders for assistance. Defendant may cross examine Dr. Nahas on the meaning of therapies, but the terminology dispute does not render Dr. Nahas' opinion inadmissible.

Defendant also claims that Dr. Nahas lacks a basis for his opinion that there are no treatments for retrograde amnesia. Dr. Nahas is a psychiatrist, a professor of psychiatry and behavioral sciences, and the director of the Brain Stimulation

Laboratory and Mood Disorder Program at MUSC. Dr. Nahas' testimony demonstrates that this is precisely the type of specialized knowledge that he has acquired through his education, training, and experience. At trial, if it becomes apparent that Dr. Nahas's expertise is somehow lacking in this area, defendant may renew its objection, however, at this point it appears that Dr. Nahas has a sufficient factual basis and specialized knowledge to provide his opinion.

Dr. Prudic also stated that cognitive remediation is not customarily within the scope of treatment of mental health professionals. Defendant claims that because Dr. Prudic could not definitely say that cognitive remediation is useless for retrograde amnesia and because "some" mental health professionals do prescribe this treatment, Dr. Prudic should not be permitted to offer her testimony. These concerns go to weight, not admissibility, and are therefore overruled.

E. Disability

Dr. Bumgartner's report contains his opinion that plaintiff has been unable to return to work because of her memory loss. Defendant claims that Dr. Bumgartner is not qualified to provide this opinion. Dr. Bumgartner is a neurologist, he attended medical school, and is aware of the deficiencies in plaintiff's memory. Dr. Bumgartner explains that deficits in plaintiff's memories of her specialized area, OB/GYN, and her inability to create new memories due to her anterograde memory loss make plaintiff incapable of resuming this specialized career. Dr. Bumgartner's expertise concerning the brain, cognitive functioning, and the general requirements that doctors have specialized knowledge based on medical training renders Dr.

Bumgartner qualified to provide his opinion on plaintiff's ability to return to her medical practice.

IV. CONCLUSION

For the foregoing reasons, the court:

1. **OVERRULES** defendant's objections to Drs. Nahas, Prudic, Waid, and Bumgartner's opinions that the type of ECT treatments plaintiff received can cause long term retrograde memory loss;
2. **SUSTAINS** defendant's objection to Drs. Nahas, Bumgartner, and Waid's opinion that ECT treatments can cause long term anterograde memory loss;
3. **OVERRULES** defendant's objections to each of the doctors' opinions that plaintiff has retrograde memory loss;
4. **OVERRULES** defendant's objection to Drs. Nahas, Prudic, Waid, and Bumgartner's testimony that plaintiff's bilateral ECT treatments caused her retrograde memory loss;
5. **SUSTAINS** defendant's objection to testimony that plaintiff's bilateral ECT treatments caused her anterograde memory loss;
6. **SUSTAINS** defendant's objection to Dr. Waid's opinion that plaintiff's bilateral ECT treatments caused her other cognitive impairments;
7. **OVERRULES** defendant's objection to Dr. Nahas' testimony that there are no known therapies to effectively treat retrograde memory loss;

8. **OVERRULES** defendant's objection to Dr. Prudic's opinion that cognitive remediation is not customarily within the scope of the mental health profession;

9. **OVERRULES** defendant's objection to Dr. Bumgartner's opinion that plaintiff cannot return to her work due to her memory impairments.

AND IT IS SO ORDERED.

DAVID C. NORTON
UNITED STATES DISTRICT JUDGE

May 1, 2012
Charleston, South Carolina